News and Resources from the National Institutes of Health

Urologic Diseases
Research Updates

National Kidney and Urologic Diseases Information Clearinghouse Winter 2011

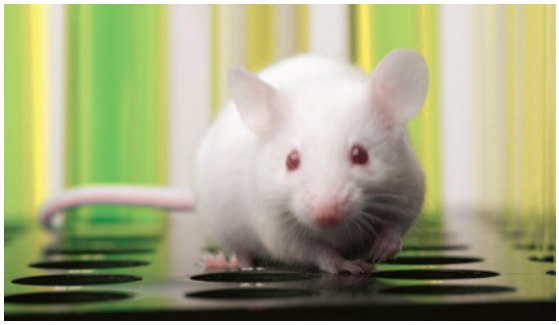
Study Uncovers Pain Pathway Associated with Urinary Tract Infections

A study by scientists at Northwestern University helps explain how urinary tract infections (UTIs) cause pelvic pain. The study was funded by the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) and offers insight into new UTI pain management strategies.

UTIs trigger more than 7 million trips to the doctor and more than 100,000 trips to the emergency room each year. "Although most patients with UTI experience pelvic pain, the precise mechanism underlying UTI-induced pelvic pain remains unknown," wrote David J. Klumpp, Ph.D., associate professor of urology at Northwestern University's Feinberg School of Medicine, and co-authors.

Whereas the vast majority of UTIs cause a painful, burning sensation in the bladder and urethra, about 5 percent of UTI patients have no symptoms. To learn more about UTI pain mechanisms, Klumpp and colleagues looked for clues in the bacteria that fail to cause symptoms when they infect the urinary tract.

The researchers used a laboratory mouse model to study UTI-associated pelvic pain. Mouse bladders were infused with specific strains of *E. coli* bacteria or purified bacterial components. Pain was assessed by measuring the response to von Frey filaments—stiff, hairlike fibers—pushed against the skin over the mouse's pelvic region. Pain receptors in skin over the pelvic region correspond to pain receptors in pelvic organs. The researchers interpreted a higher mean response frequency as an indication of greater pain.



As expected, *NU14*, an *E. coli* strain highly representative of those most commonly associated with human UTIs, elicited greater pain in mice than did *83972 E. coli*, a strain that causes asymptomatic UTI in humans. Once validated, the mouse model was used to look for functional and structural differences between *NU14* and *83972 E. coli*.

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Inside This Issue

NIDDK
National Institute of Diabetes and Digestive and Kidney Diseases

"These observations suggest a novel treatment strategy using a probiotic that would minimize the symptoms of infection without reliance on empirical therapies that contribute to antimicrobial resistance."

David J. Klumpp, Ph.D.
Associate Professor of Urology, Feinberg School of Medicine, Northwestern University, and co-authors

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Pain did not correlate with bladder inflammation. "Inflammation is often assumed to underlie infection pain, but we failed to observe a consistent relationship between pain and inflammation," wrote Klumpp, et al. After bladder instillation of *NU14* or *83972 E. coli,* the scientists measured myeloperoxidase (MPO) levels as a marker of inflammation. MPO is a pro-inflammatory enzyme released by immune cells called neutrophils in response to the presence of bacteria. Although pain was much higher in mice infected with the *NU14* strain, MPO levels were similar.

The researchers also looked at inflammation caused by mast cells, a type of immune cell that triggers inflammation when activated by bacterial pathogens. The researchers' previous work showed that mast cells play a critical role in pain associated with interstitial cystitis, a non-pathogenic painful bladder condition. Mast cell-deficient mice tested with the UTI model, however, still showed significant pain with *NU14 E. coli* infection. The observation suggested to the researchers that UTI pain differs from mast cell-independent interstitial cystitis pain.

Next, the researchers looked at virulence factors, essentially the tools a bacterium uses to infect host cells. The *NU14* strain has hairlike follicles called pili on its cell surface that it uses to attach to and infect host cells. By contrast, the *83972* strain lacks pili. But even when genetically endowed with the same pili as *NU14,* the *83972* strain did not cause pain in mice. Disabling the adhesion

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Would you like to know more about NIDDK-supported research?

The National Institutes of Health (NIH) provides access to a variety of reporting tools, reports, data, and analyses of NIH research activities at the Research Portfolio Online Reporting Tools (RePORT) website, *www.projectreporter.nih.gov/reporter.cfm.* One of the tools available is RePORT Expenditures and Results (RePORTER), which allows users to search a repository of NIH-funded research projects and access and download publications and patents resulting from NIH funding. ■

Urologic Diseases
Research Updates

Urologic Diseases Research Updates, an email newsletter, is sent to subscribers by the National Kidney and Urologic Diseases Information Clearinghouse (NKUDIC). The newsletter features news about urologic diseases, special events, patient and professional meetings, and new publications available from the NKUDIC and other organizations.

You can read or download a PDF version or subscribe to the newsletter at *www.kidney.niddk.nih.gov/about/newsletter.htm.*

Executive Editor: Christopher Mullins, Ph.D.

Dr. Mullins serves as the director of Basic Cell Biology Programs in Urologic and Kidney Disease at the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), part of the National Institutes of Health in Bethesda, MD. Dr. Mullins is a graduate of the University of Louisville and the Vanderbilt University Graduate School of Medicine, where he completed his graduate training in the Department of Microbiology and Immunology in 1997. As a National Research Council fellow, Dr. Mullins conducted research at the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development from 1997 to 2002 and joined the NIDDK's Division of Kidney, Urologic, and Hematologic Diseases in his present position in 2002. His responsibilities include serving as the project scientist for the NIDDK's Multidisciplinary Approach to the Study of Chronic Pelvic Pain (MAPP) Research Network and providing development and oversight for additional NIDDK initiatives, including the NIDDK Prostate Research Strategic Plan.

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Prostate Enlargement with Bladder Overactivity Associated with Decreased Big Potassium Channel Activity

Big potassium (BK) channels—otherwise known as large conductance calcium- and voltage-activated potassium channels—are cell membrane signaling proteins involved in regulating muscle contractions. A recent study funded by the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) indicates a relationship between BK channel activity in the bladder detrusor—the thin layer of muscle in the bladder wall that contracts to expel urine—and detrusor overactivity (DO) related to prostate enlargement.

"These findings in BPH patients with DO, as well as in the animal model for PBOO, suggest that loss of BK channel expression leads to DO."

Samuel Chacko, D.V.M., Ph.D.
Director of Basic Urological Research, University of Pennsylvania School of Medicine, and co-authors

The prostate gland surrounds the urethra. When the prostate enlarges with benign prostatic hyperplasia (BPH), it constricts the urethra, obstructs urine flow during bladder emptying, and causes the bladder to retain urine. To compensate for decreased urethral diameter, the detrusor thickens to more forcefully expel urine. As a consequence, some men develop a condition called overactive bladder (OAB) in which the detrusor contracts as the bladder fills. These abnormal contractions, called DO, cause urinary urgency, the sensation of needing to urinate right away, and urinary frequency, the need to urinate more often.

The researchers wanted to find out if increased detrusor contractions in patients with BPH-induced OAB are related to altered BK channel activity. Using a rabbit model to simulate the effects of BPH-induced urethral obstruction, the researchers surgically induced partial bladder outlet obstruction (PBOO), significantly increasing detrusor thickness and frequency of urination. They then measured contractions and BK channel protein content in detrusor tissue samples. Compared with controls, the amount of detrusor BK protein in the PBOO group decreased while spontaneous detrusor contractions increased.

A decrease in BK channel expression was also seen in bladder tissue taken from men with BPH and DO. BK channel activity in bladder samples from men with BPH but without DO was comparable to samples from men without BPH. However, among samples from men with BPH, those from men who also had DO contained significantly less BK channel protein than tissues from men without DO. In lab experiments, samples from men with DO and BPH had significantly more spontaneous contractions.

"These findings in BPH patients with DO, as well as in the animal model for PBOO, suggest that loss of BK channel expression leads to DO," wrote Samuel Chacko, D.V.M., Ph.D., director of basic urological research, University of Pennsylvania School of Medicine, and co-authors in their report, which appeared in the June 2010 issue of *American Journal of Physiology-Renal Physiology*.

To determine if the relationship between PBOO and BK channel downregulation was causal, the researchers measured the level of phosphorylation of myosin light chain (MLC_{20}), a

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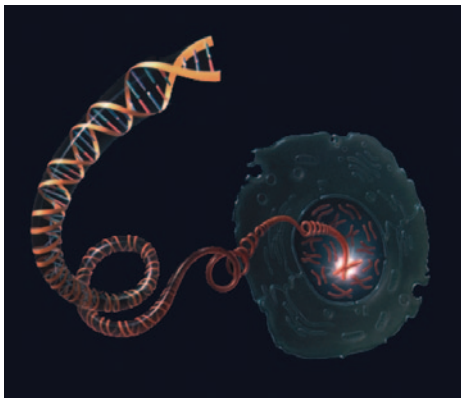
Scientists Catalog Genes Expressed during Urogenital Development



Normal urogenital development is dependent on a network of *Wnt7a*-associated genes, according to scientists funded by the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) who examined gene expression of mice during prenatal days 13 and 14. The study provides reference data for future efforts aimed at understanding and preventing urogenital birth defects.

"This will be a valuable resource for investigating the molecular basis of morphogenesis in this organ system and to investigate correlations between development and disease."

Melissa H. Little, Ph.D.
Professor, Queensland University, and co-authors

"Congenital anomalies of the urogenital tract are the third most common birth defects, with abnormalities of the external genitalia being the most prevalent manifestation," wrote Melissa H. Little, Ph.D., a professor at Queensland University, Australia, and co-authors in the August 15, 2010, issue of *Developmental Biology*. Despite the clinical relevance and prevalence of these defects, very little research has addressed the genetic basis for urogenital development.

Common genital birth defects include undescended testicles and hypospadias—a condition in which the urethral outlet is located along the shaft of the penis instead of at the end. The two conditions affect as many as one in 125 males and are becoming increasingly prevalent, possibly due to prenatal exposure to environmental compounds that bind male hormone receptors. Less common conditions include micropenis, an extremely small penis, and diphallia, the presence of two penises. For those affected, genital birth defects create social and reproductive challenges.

The scientists removed bladder and urethral tissue from mice at prenatal days 13 and 14. They then used DNA microarrays to screen for hundreds of gene products and identify the most actively expressed genes. After building a "catalog" of gene activity, the team identified 31 genes in the genital tubercle—the yet unformed tissue node destined to become the external genitalia—that are potentially critical for normal development. Of note were genes associated with the *Wnt7a* gene network, which is important in craniofacial and limb development. Several of the genes in the network are known to be influenced by sex hormones, suggesting potential routes by which environmental factors could disrupt normal development.

"This study describes the creation and analysis of the first comprehensive catalog of gene expression profiles describing the early murine lower urinary tract and genital tubercle," wrote Little and co-authors. Combined with existing data that catalogs later stages of urogenital development, "this will be a valuable resource for investigating the molecular basis of morphogenesis in this organ system and to investigate correlations between development and disease."

The National Kidney and Urologic Information Clearinghouse, part of the NIDDK, has fact sheets and easy-to-read booklets about urologic disorders. For more information or to obtain copies, visit *www.urologic.niddk.nih.gov*. ■

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protein on the pilus tip of the *NU14* strain that is critical for host cell attachment provided further support that pili are not key elements of UTI pain inducement. *NU14,* with or without a functional adhesion protein, evoked pain.

A different virulence factor, however, did mediate UTI-related pain. Lipopolysaccharide (LPS) is a structural component of the *E. coli* bacterial membrane. Infected hosts identify LPS as a toxin and quickly mount an immune response. Klumpp and colleagues tested their mouse model with LPS purified from *NU14* and *83972 E. coli.* Whereas instillation of *83972* LPS caused no pain, significant pain was evoked with instillation of *NU14* LPS.

To further characterize the role of LPS in UTI pain, the researchers investigated whether pain would be inhibited in the absence of toll-like receptor 4 (TLR4)—a receptor protein found on many types of cells, including bladder cells, that binds LPS. Compared with controls, genetically modified TLR4-deficient mice experienced significantly less pain when their bladders were instilled with *NU14*-derived LPS.

"Our results show that LPS isolated from *NU14* induced pelvic pain through a TLR4-dependent mechanism, providing a novel pathway of pelvic pain induction and relief," wrote Klumpp, et al. "Furthermore, our study is the first, to our knowledge, to demonstrate that LPS is the initiator of UTI-induced pelvic pain."

Interestingly, *83972*-derived LPS weakened *NU14* LPS-induced pelvic pain by 40 percent. The researchers speculated that *83972* LPS blocks *NU14* LPS from binding to TLR4.

"These observations suggest a novel treatment strategy using a probiotic that would minimize the symptoms of infection without reliance on empirical therapies that contribute to antimicrobial resistance," wrote Klumpp, et al. Probiotics are microorganisms with beneficial health properties, such as the bacteria in yogurt. The report called for additional research into probiotic therapies for UTIs.

To learn more about NIDDK-funded urologic research, visit *www2.niddk.nih.gov/Research/ScientificAreas/Urology.*

The National Kidney and Urologic Diseases Information Clearinghouse has fact sheets and easy-to-read booklets about UTI and other urologic conditions. For more information or to obtain free copies, visit *www.urologic.niddk.nih.gov.*

Prostate Enlargement, continued from page 3

component of the protein myosin that serves as the molecular motor for muscle contraction. In laboratory experiments with cultured detrusor cells, they found that blocking the cells' BK channel expression increased MLC_{20} phosphorylation—a mechanism by which myosin function is turned on or off.

Increased MLC_{20} phosphorylation through depletion of BK channel function contributes to enhanced detrusor muscle contraction and DO, the authors concluded. The study helps clarify the complex physiology of bladder muscle contraction and BPH-related symptoms and provides avenues for future exploration of better preventive and treatment strategies.

About 50 percent of men in their 50s have BPH. Between 26 and 46 percent of men will have BPH-related moderate to severe lower urinary tract symptoms between the ages of 40 and 79. Despite their high prevalence, benign diseases of the prostate are poorly understood and can be difficult to treat.

To learn more about NIDDK-supported prostate research, see the NIDDK Prostate Strategic Plan, available at *www2.niddk.nih.gov/Research/ScientificAreas/Urology.*

The National Kidney and Urologic Diseases Information Clearinghouse, part of the NIDDK, has fact sheets and booklets about prostate problems. For more information or to obtain free copies, visit *www.urologic.niddk.nih.gov.*

HHS Launches Healthy People 2020

The U.S. Department of Health and Human Services (HHS) officially launched Healthy People 2020 on December 2, 2010, at the George Washington University in Washington, D.C. The event marked the formal release of the decade's national health promotion and disease prevention objectives.

"[Healthy People 2020] should no longer be known primarily as a print-based reference book to be kept on the shelf for a decade. It should also be a Web-accessible database that is searchable, multilevel, and interactive."

Advisory Committee on National Health Promotion and Disease Prevention Objectives for 2020

Each decade since 1980, the HHS has released a comprehensive set of national public health objectives. Known as Healthy People, the initiative has been grounded in the notion that setting objectives and providing benchmarks to track and monitor progress can motivate, guide, and focus action.

The HHS convened the Secretary's Advisory Committee on National Health Promotion and Disease Prevention Objectives for 2020 to aid in the process of developing the next decade's guidelines. The Advisory Committee was charged with providing advice and consultation to the Secretary: 1) to facilitate the development and implementation of national health promotion and disease prevention goals and objectives, and 2) to inform the development of initiatives that will occur during initial implementation of the goals and objectives.

Healthy People 2020 should assist federal agencies in setting priorities and in providing funding and support to organizations and institutions that are able to help achieve the objectives. The Advisory Committee stated that Healthy People 2020 "should no longer be known primarily as a print-based reference book to be kept on the shelf for a decade. It should also be a Web-accessible database that is searchable, multilevel, and interactive."

Healthy People 2020's overarching goals include eliminating preventable disease, disability, injury, and premature death; achieving health equity, eliminating disparities, and improving the health of all groups; creating social and physical environments that promote good health for all; and promoting healthy development and behaviors across every stage of life.

Members of the public health community—especially federal, state, and local health agencies—have traditionally been viewed as the primary audiences for Healthy People. The Advisory Committee proposes that Healthy People 2020 be designed for use by a wider range of groups in both the public and private sectors. Tailored messages and products are needed to make Healthy People useful for this expanded audience-base, which should include the general public, voluntary organizations, faith-based organizations, businesses, health care providers, decision-makers, researchers, community-based organizations, grass-roots advocates, and others whose actions have significant health consequences.

The December 2 launch program included remarks by HHS Assistant Secretary for Health Howard K. Koh, M.D., and members of the Advisory Committee; an introduction and orientation to the Healthy People 2020 website and objectives; and a panel discussion about the uses of Healthy People 2020.

For more information about the Healthy People 2020 initiative, please visit *www.healthypeople.gov/HP2020.* ■

Administration Announces Regulations Requiring New Health Insurance Plans to Provide Free Preventive Care

The U.S. Departments of Health and Human Services (HHS), Labor, and the Treasury issued new regulations in July requiring new private health plans to cover evidence-based preventive services and eliminate cost-sharing requirements for such services. The new rules will help Americans gain easier access to services such as blood pressure, diabetes, and cholesterol tests; many cancer screenings; routine vaccinations; prenatal care; and regular wellness visits for infants and children.

"Getting access to early care and screenings will go a long way in preventing chronic illnesses like diabetes, heart disease, and high blood pressure."

Michelle Obama
First Lady

"Today, too many Americans do not get the high-quality preventive care they need to stay healthy, avoid or delay the onset of disease, lead productive lives, and reduce health care costs," said HHS Secretary Kathleen Sebelius. "From the Recovery Act to the First Lady's Let's Move Campaign to the Affordable Care Act, the Administration is laying the foundation to help transform the health care system from a system that focuses on treating the sick to a system that focuses on keeping every American healthy."

Chronic diseases, such as heart disease, cancer, and diabetes, are responsible for seven of 10 deaths among Americans each year and account for 75 percent of the nation's health spending—and often are preventable. Nationally, Americans use preventive services at about half the recommended rate. An estimated 11 million children and 59 million adults have private insurance that does not adequately cover immunization, for instance. Studies have shown that cost sharing, including deductibles, coinsurance, and copayments, reduces the likelihood that people will use preventive services.

"Getting access to early care and screenings will go a long way in preventing chronic illnesses like diabetes, heart disease, and high blood pressure," said First Lady Michelle Obama. "And good [preventive] care will also help tackle an issue that is particularly important to me as First Lady and as a mother—and that is the epidemic of childhood obesity in America today. These are important tools, and now it's up to us to use them."

"One of the best ways to improve the quality of your life—and control health care costs—is to prevent illness in the first place," said Second Lady Jill Biden. "Focusing on prevention and early treatment makes more sense than trying to play catch-up with a potentially deadly disease. Quite simply, these [preventive] services will save lives."

Under the recently issued regulations, new health plans beginning on or after September 23, 2010, must cover preventive services that have strong scientific evidence of their health benefits, and these plans may no longer charge a patient a

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NIH Pays Tribute to the First Woman Appointed Director of an NIH Institute, Ruth L. Kirschstein

Current and former National Institutes of Health (NIH) scientists and staff, as well as members of Congress, honored Ruth L. Kirschstein, M.D., the first woman appointed director of an NIH Institute, for the positive impact she made as a leader in the scientific community.

"Ruth Kirschstein was a legendary scientist and administrator."

David Obey
U.S. Representative,
Chairman of the House
Appropriations Committee

"Ruth embodied the spirit of NIH. She was an icon. She was loved and admired by so many at the NIH, across the medical research community, among hundreds of members of Congress, and around the world. There are few at the NIH who have not been touched by her warmth, wisdom, interest, and mentorship," said Francis S. Collins, M.D., Ph.D., director of the NIH.

Kirschstein, who passed away in 2009, was honored in 2010 with a tribute and symposium in her honor that featured four sessions with 11 featured speakers and ended with a reception. Scientists and researchers who received funds from the Ruth L. Kirschstein National Research Service Award presented the sessions. The awards have supported the work of thousands of researchers, and the quality of their research has elevated the program to the ranks of Fulbright Awards and Rhodes Scholarships.

As the first woman director of an NIH Institute—the National Institute of General Medical Sciences (NIGMS)—Kirschstein was known for mentoring young researchers, especially women and minorities. In 1993, Kirschstein became acting director of the NIH, and then served as the deputy director under NIH Director Harold Varmus for the next 6 years. She was acting director again from 2000 to 2002.

A Brooklyn native, Kirschstein wanted to be a doctor from a young age and fulfilled her dream after graduating *magna cum laude* in 1947 from Long Island University. She then went to Tulane University School of Medicine, where she was one of 10 women in a class of 100 men.

She interned in medicine and surgery at Kings County Hospital in Brooklyn and completed residencies in pathology in Detroit, New Orleans, and the then new NIH Clinical Center. In 1957, Kirschstein joined the Federal Government, beginning a 15-year stint as an experimental pathologist at the NIH Division of Biologics Standards, now known as the U.S. Food and Drug Administration (FDA) Center for Biologics Evaluation and Research.

In her first major accomplishment as a scientist, Kirschstein led the development of a safety test for the polio vaccine in the 1950s and 1960s. Ultimately, her work led to widespread adoption of the Sabin oral vaccine, especially in developing countries. Kirschstein continued to develop tests for the safety of vaccines for other diseases, including measles.

In 1974, after 2 years with the FDA, Kirschstein was appointed director of the NIGMS, a post she held for nearly 20 years. One of her most significant accomplishments as NIGMS director was her dedication to funding HIV/AIDS research and helping to establish the Genbank nucleic acid sequence database, which has been a

RUTH L. KIRSCHSTEIN,
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copayment, coinsurance, or deductible for these services when they are delivered by a network provider. Specifically, these recommendations include the following:

- **Evidence-based preventive services.** The U.S. Preventive Services Task Force, an independent panel of scientific experts, rates preventive services based on the strength of the scientific evidence documenting their benefits. Preventive services with a "grade" of A or B—such as tobacco cessation counseling and screenings for breast and colon cancer, vitamin deficiencies during pregnancy, diabetes, high cholesterol, and high blood pressure—will be covered under these rules.
- **Routine vaccines.** Health plans will cover a set of standard vaccines recommended by the Advisory Committee on Immunization Practices. Such vaccines range from routine childhood immunizations to periodic tetanus shots for adults.
- **Preventive care for children.** Health plans will cover preventive care for children recommended under the *Bright Futures* guidelines, developed by the Health Resources and Services Administration with the American Academy of Pediatrics. These guidelines provide pediatricians and other health care professionals with recommendations on the services they should provide to children from birth to age 21 to keep them healthy and improve their chances of becoming healthy adults. The types of services that will be covered include regular pediatrician visits, vision and hearing screenings, developmental assessments, immunizations, and screening and counseling to address obesity and help children maintain a healthy weight.
- **Preventive care for women.** Health plans will cover preventive care provided to women under both the Task Force recommendations and new guidelines being developed by an independent group of experts, including doctors, nurses, and scientists, which are expected to be issued by August 1, 2011.

More information about the Affordable Care Act's new rules on preventive care can be found at *www.healthcare.gov/law/about/provisions/services/index.html.*

The regulations can be found at *www.healthcare.gov/center/regulations/prevention/regs.html.* ■

Ruth L. Kirschstein, continued from page 8

critical tool for biomedical research. She championed myriad programs in basic biomedical research and research training that have helped to transform biomedical research.

"Ruth Kirschstein was a legendary scientist and administrator . . . a pioneer . . . a champion for the advancement of women and minorities in biomedical research . . . a strong advocate for research training, especially interdisciplinary predoctoral programs," said U.S. Representative David Obey, chairman of the House Appropriations Committee.

Kirschstein remained active at the NIH in her later years as a senior adviser; she was on a conference call with NIH Director Collins a week before her death. Kirschstein embodied the spirit of the NIH and was responsible for the career development of innumerable scientists and administrators. ■

Nurik Appointed Director of NIDDK Information Clearinghouses

"Jody is extremely detail-oriented and gifted in big-picture-planning too."

Kathy Kranzfelder
Director, Office of Communications and Public Liaison, NIDDK, NIH

Jody Nurik has been named director of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) Information Clearinghouses. She will oversee long- and short-range plans and operations for the NIDDK's three national health information Clearinghouses and manage the Clearinghouses' support contract. Nurik will also manage the update and production of more than 300 award-winning print and online publications and three national awareness campaigns—bladder control for women, celiac disease, and bowel incontinence.

The Clearinghouses disseminate science-based health information to the public, health professionals, and the media. In 2009, the Clearinghouses handled nearly 79,000 information requests, received 6 million visitors to the NIDDK health information website, and distributed more than 1 million publications.

In 2004, Nurik oversaw the transition and establishment of all NIDDK Clearinghouse support contract operations to Circle Solutions, Inc., where she served as project manager. "Jody is extremely detail-oriented and gifted in big-picture-planning too," noted Kathy Kranzfelder, director, Office of Communications and Public Liaison, NIDDK, National Institutes of Health, and former director of the Clearinghouses. "From inquiry response to materials development to inventory database management to exhibit staffing and scheduling to reporting—the Clearinghouses will definitely benefit from new perspective and deep experience from Jody."

Prior to joining the NIDDK, Nurik was director of product marketing at Resolution Health/WellPoint, Inc., where she developed and managed health communications for health care providers and the public. In this role, Nurik led plain language initiatives, outreach campaigns, and market research with physicians and consumers to improve content and design.

Nurik has also managed an information center for the Health Resources and Services Administration, also part of the U.S. Department of Health and Human Services, and has launched adult and pediatric diabetes disease management programs at one of the largest home health companies in the United States. Nurik began her career as a nurse, moving up to supervise urology units of a hospital affiliated with Baylor College of Medicine.

To learn more about the NIDDK Information Clearinghouses, visit *www.niddk.nih.gov.* ■

Kirkali Joins NIDDK as Senior Scientific Officer for Clinical and Translational Research

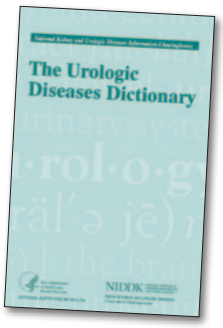
Ziya Kirkali, M.D., has joined the National Institute of Diabetes and Digestive and Kidney Diseases' (NIDDK's) Division of Kidney, Urologic, and Hematologic Diseases as a senior scientific officer for clinical and translational research in urologic diseases. In the past, Kirkali served as president of the Urological Research Society and also as chairman and secretary of the European Organization for Research and Treatment of Cancer–Genito Urinary Group. ■

Updated Publication

The National Kidney and Urologic Diseases Information Clearinghouse has updated the following publication:

- *The Urologic Diseases Dictionary*

The publication is available at *www.urologic.niddk.nih.gov.*



Upcoming Meetings, Workshops, and Conferences

The National Institute of Diabetes and Digestive and Kidney Diseases Information Clearinghouses will exhibit at the following upcoming events:

National Association of Pediatric Nurse Practitioners 32nd Annual Conference on Pediatric Health Care

March 23–26 in Baltimore.
For more information, visit *www.napnap.org/Events/AnnualConference.aspx.*

American Nephrology Nurses' Association 42nd National Symposium

March 27–30 in Boston.
For more information, visit *www.annanurse.org.*

American College of Physicians Internal Medicine 2011

April 7–9 in San Diego.
For more information, visit *www.acponline.org/meetings/internal_medicine/2011.*

Association of Health Care Journalists Health Journalism 2011

April 14–17 in Philadelphia.
For more information, visit *www.healthjournalism.org.*

National Kidney Foundation 2011 Spring Clinical Meetings

April 26–30 in Las Vegas.
For more information, visit *www.kidney.org.*

American Urological Association 2011 Annual Meeting

May 14–19 in Washington, D.C.
For more information, visit *www.auanet.org.*

American College Health Association 2011 Annual Meeting

May 31– June 4 in Phoenix.
For more information, visit *www.acha.org.*

American Academy of Physician Assistants 39th Annual Conference

May 31–June 4 in Las Vegas.
For more information, visit *www.aapa.org.*

NIH Publication No. 11–5743
January 2011